THE PRINTING ROOM

The John M. Kelly Library, St. Michael's College
University of Toronto

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The Front-End Colophon: Being the Greek word for *end*, *summit* or *finish*, the colophon was historically an inscription at the end of a manuscript, conveying information about the scribe who produced it, the patron who commissioned it, as well as other details about the circumstances of the manuscript's production. As this project straddles the line between history and the present, between the mechanical and the electronic, and between hand-operated letterpresses and computer-operated offset presses, we thought it would not be out of keeping with this contrasting theme if we placed the colophon, in contrast to tradition, at the front of this volume. This homage to the art of printing was printed in an edition of 500 copies, and set in Adobe Garamond Pro, a digital version of Claude Garamond's eponymous old style serif font. The typeface was designed by Garamond in the 1540's for the Parisian printer Robert Estienne. Garamond's work was inspired by Francesco Griffo's types for the Venetian printer Aldus Manutius in 1495. Robert Slimbach adapted Garamond for Adobe in 1989. Designed in Adobe InDesign CS3, this volume about the mechanics of letterpress printing was produced entirely in the digital realm. This book was printed by the Book & Media Studies Program student Charles Topping, and was printed on 80lb (148 GSM) Sappi New Opus Gloss Paper, on a five-colour Heidelberg Speedmaster SM52, at Kwik Kopy Design & Print Centre, 296 Jarvis Street, Toronto, Ontario.

◆

Text, Photography & Design: Jenny Gilbert and Renée Jackson

C.M.C. Jobber article by: Ruth-Ellen St. Onge

Joseph Sablé Centre for 19th Century French Studies,
Department of French Studies, University of Toronto, 2009.

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A Word from the Principal of St. Michael's College

Established in 2002, the Book and Media Studies Program is sponsored by St. Michael's College for the Faculty of Arts and Science, in the University of Toronto. Despite naysayers who claimed that the "book was dead" in the post modern era, the Book and Media Studies Program has been the little program that grew. In little more than five years it has become one of the fastest growing new programs at the University of Toronto. In 2003-2004, its first year of operation, it enrolled 19 students in its minor program, and served 38 students in total. In 2009, Book and Media Studies has 268 students enrolled in its Minor and Major Programs and over 500 students registered in its courses. What makes the program's success all the more startling has been the fact that there are no full-time faculty members attached to the program. Its instructors come from many departments and programs of the University and their work in the program is testament to their enthusiasm for the subject matter and their dedication to students.

The Program brings together the academic study of the history of manuscripts and print and the variety of media revolutions that have taken place over the last 3,000 years of humankind. Students in the Program are as likely to explore the culture of readership and print as they are to examine and analyze the cultural influences of the new media, the evolution of on-line communications, and the significance of broadcast media on our society. The Printing Room is the jewel in the crown, where students can balance their in-class explorations with the hands–on intricacies and skills required of the printer's art. Our Printing Room is the arena for experiential learning – a place where students come to understand the history of print in a meaningful and direct way. We are enormously proud of our Program, the Printing Room, and the love of learning demonstrated so manifestly in our students and so unselfishly by our professors.

Professor Mark G. McGowan
Principal, St. Michael's College

About Books & Printing...

It was not until the 19th century that printing – mass printing, that is – really took shape. From 1455 until the early 1800's, printing technology remained largely unchanged. It relied on the hand-press, with composition, inking and binding all being done manually. By the mid-century however the "mechanization" of the whole process was almost complete with the exception of composition, which became mechanized in the 1880's, with the invention of the Linotype.

In the context of a rare book collection that focusses on the 19th century – namely the Centre for 19th Century French Studies, located in the Kelly Library – nothing is more fitting than a working printing room, which features some of the machines that made history, from the mighty Reliance Press (based on the model developed by Gutenberg), to the table-top Adana, which provided many people with supplementary income during the 20th century.

Our type and our machines provide students with a very unique experience, that of understanding for themselves, through hands-on exercises, what it meant to print before the advent of the personal computer and printer, before "print on demand" became part of our daily lives. The equipment with which our students work represents an era when printing was a long process, one which required technical skills, a good eye for graphic design, excellent spelling and grammar, and, first and foremost, the love of the printed word.

Any machine that produces the written word is of interest to us. To the printing presses, over time, were added a selection of typewriters, from an early 20th century Hammond, to the extremely popular Selectric of the 1960's. Hopefully, this rich and diverse selection of machines will continue to grow, for the pleasure, enjoyment and enlightenment of students and visitors alike.

This publication is designed to showcase this unique Printing Room and its artifacts, of which we are enormously proud. It reflects our respect of a longstanding tradition and our commitment to book history as a discipline.

Professor Yannick Portebois
Director
J. Sablé Centre for 19th Century French Studies
Department of French Studies
University of Toronto

Professor Dorothy Speirs
Curator, The Zola Archives
J. Sablé Centre for 19th Century French Studies
Department of French Studies
University of Toronto

A Word from the Director of Library & Archives

Libraries are institutions that tell us what we know, what we don't know, what we need, what we value. A good library is at the heart of any respectable university and its holdings of books and journals are the lifeblood of faculty and students alike. The physical objects within its walls are, themselves, mirrors of civilization reflecting humanity's successes and failures and providing signposts for the future.

The advent of the personal computer and the Internet has brought on a new age of information abundance in which libraries will play a key role in developing and stewarding electronic resources, guiding users to reliable sources and teaching them the skills to make fullest use of this digital information bounty.

Yet, today's reality rests on centuries of scholarship disseminated through the printed book. The physicality of the book has played an important part in the manner in which the text contained within it has been used and interpreted over time. In the St. Michael's College Printing Room, students have a unique opportunity to engage with the interplay between intellectual message and physical design. There is no better place to do so than in the library itself, which incorporates past, present and future technologies that facilitate the transmission of ideas through the written word.

Professor Jonathan Bengtson
Director of Library and Archives
The John M. Kelly Library
St. Michael's College

Welcome to the Printing Room...

As former (Jenny) and current (Renée) students in the Book and Media Studies Program at St. Michael's College we have been lucky enough to get our hands dirty working in the Printing Room, as well as doing research on 19th and 20th century printing history. Our work in the Printing Room has complemented our coursework in the Book & Media Studies Program, providing valuable hands-on experience.

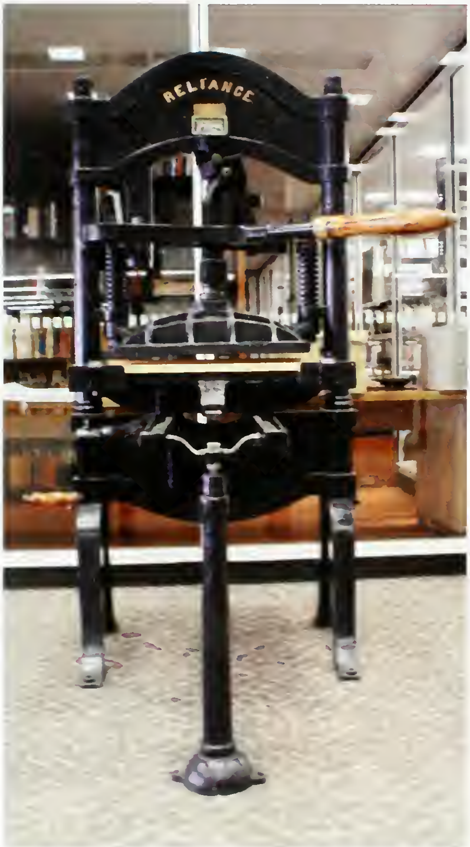
While we are conducting our work in the Printing Room, students often burst in, looking to print their work, and are stunned to realize that the sign on the door reading "Printing Room" does not mean a room with a printer attached to a computer, but is intended to mean a room full of printing presses. This publication seeks to demystify the objects in the Printing Room to those interested in book and print culture, as well as to those who are simply interested in what lies behind the door to the "Printing Room". This image-laden text provides information both about the printing presses and the other equipment in the Printing Room, as well as some brief background information about how the equipment is used and its role in the history of printing.

Jenny Gilbert & Renée Jackson
Research Assistants
Joseph Sablé Centre for 19th Century French Studies
John M. Kelly Library, St. Michael's College
University of Toronto

The above image has special significance for us because it was derived from a traditional image of a pressman. We digitally altered this image to create an engraving which reflects the changing demographics of those working with and studying the medium of printing.

The Reliance Press

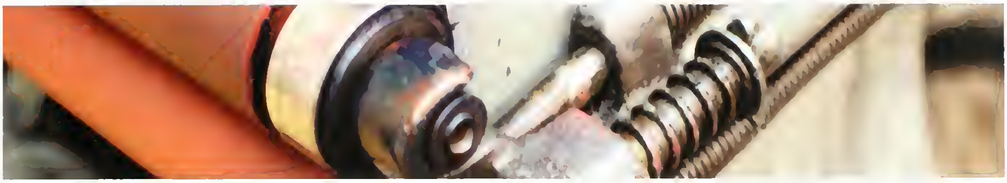
c. 1895-1911



The Reliance press is a variation of the Washington press. The Washington press was invented in the early 19th century by New York printer Samuel Rust. The first patent for the press was issued in 1821. Rust's invention was distinguished from other iron hand presses of the time by its new frame design, which incorporated hollow, cast-iron columns. The resulting press was significantly lighter than other presses and could also be taken apart. This allowed easier shipping of the press, a key component of its success.

The success of Rust's design was evident in the number of competing companies who produced and sold what were virtually direct copies of the press when the patent expired. Paul Shniedewend, of Chicago, was one of these imitators. Shniedewend manufactured the Reliance presses between 1895 and 1911. Though by this time innovations in printing press technology had rendered the iron hand-press obsolete for commercial printing, Shniedewend designed and sold the presses with a new process in mind: photo-engraving. The Reliance was specifically manufactured and marketed as a proofing press for images: Shniedewend's 1898 advertisement heralded "a new press of unequalled strength and rigidity for proving half-tone and process cuts".

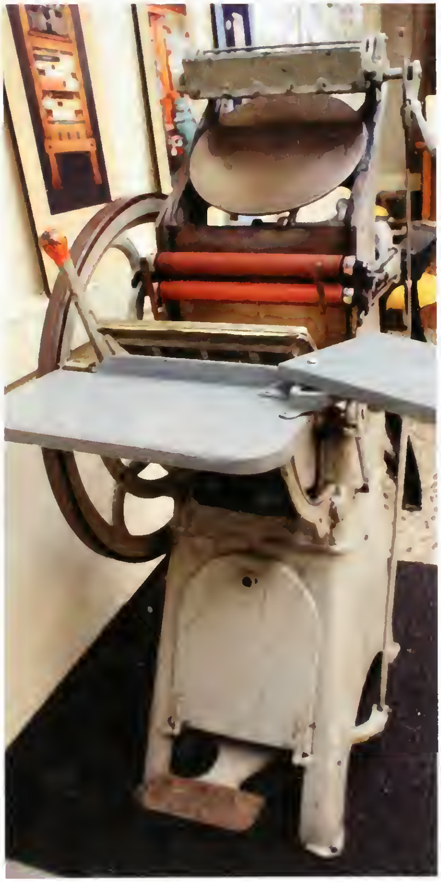
The Reliance Press sits in the foyer of the Kelly Library, greeting visitors.



The C.M.C. Jobber

c. 1936-1955

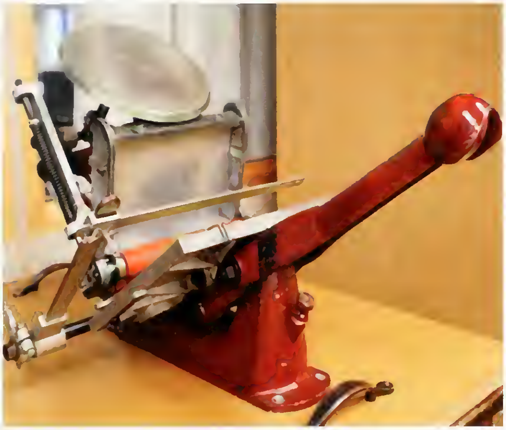
The C.M.C. Jobber is a late example of a platen press, often referred to as a jobber press. Such presses gained their name due to the fact that they were used by printers for short-run 'job' work, ranging from posters, notices, bills, cards, stationary, tickets, newsletters and the like, usually anything not exceeding one page, in contrast to print runs of multiple pages. Powered by a foot-action treadle, this vertical platen press allowed for swifter printing than traditional flat-bed hand presses.



The treadle-powered, self-inking platen press was first developed by Stephen P. Ruggles of Boston in the 1840's, and later, in the 1850's, by George P. Gordon, a Spiritualist, who claimed that the spirit of Benjamin Franklin had given him the idea for his 'Gordon Franklin,' which proved to be amongst the most popular platen presses of the century. When the patents of these early platen presses expired, the market was flooded by numerous models, either copying or improving the early developments achieved by Ruggles and Gordon. It has been estimated that 143 different treadle-driven platen presses were manufactured between 1840 and 1940 in the United States.

The design of the C.M.C. Jobber was derived from an earlier and more popular small floor model platen press – the Pearl. William Golding, of Golding and Company (Boston, Massachusetts), introduced the Pearl in 1869, and the 'improved Pearl' in 1895. In 1936, the Craftsmen Machinery Company acquired the plans for the 7×11 Improved Pearl and offered their version of the press as the C.M.C. Jobber until around 1955. The Craftsmen Machinery Company is still in existence, based in Millis, Massachusetts, and continues to produce a variety of machinery, including lithography and printing equipment.

The Adana No.2 High Speed c. 1935-1950

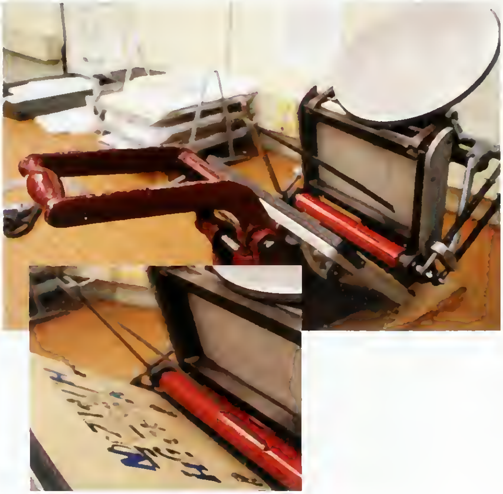


The Adana Agency was founded by Donald Aspinall, of Twickenham, England, in 1922. He served in WWI, and upon his return, in 1917, he built a prototype of a flat-bed printing press. It is likely that he acquired his interest in printing while he was recuperating from the injuries he sustained during the war: it was common for hospitals to use printing presses as a form of occupational therapy. By 1922, the Adana Agency was advertising and producing its first model, the Adana Automatic Self-Inking Printing Machine.

Designed and manufactured from 1935 until the 1950's, the Adana No. 2 High Speed is a vertical platen press. It has a printing area of 6.5 inches by 4 inches, which permitted the printer to produce a wider range of printed matter, including handbills and invoices.

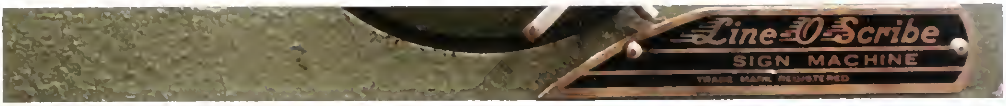
The Adana Eight-Five

c. 1953



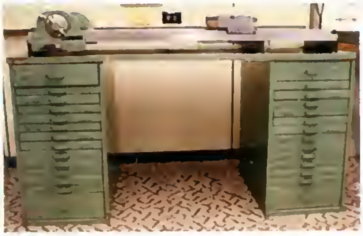
Another Adana found in the Printing Room is the Adana Eight-Five. Designed and manufactured from about 1950 until the 1990's, the Adana Eight-Five is also a vertical platen press, and is named after the size of the printable area.

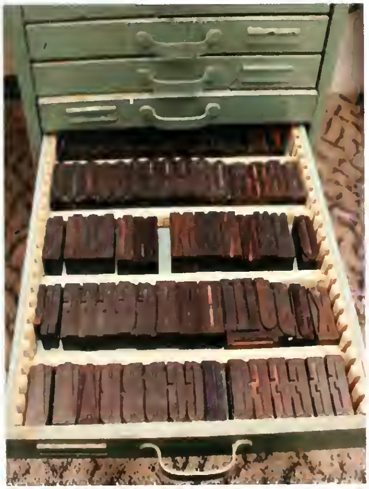
The Adana Agency produced a variety of presses over the years, including both flat-bed and platen presses, as well as treadle presses. They also manufactured printing accessories such as guillotines, ink ducts and thermographs. Also offered in the Adana catalogue were inks, typefaces, fancy borders and stock illustration blocks. The Adana Agency, and then as it was later known, Adana (Printing Machines) Limited, was in business until 1990, at which point it was absorbed by the Caslon Group, who ceased production of Adana printing presses in 1999. Most hobby printers, as well as many professional printers, have, at some point, used an Adana printing press: Adana presses are among the most popular hand-presses of the 20th century.



The Line-O-Scribe

c. 1931-1950's





The Line-O-Scribe is a sign and proofing press, manufactured between 1931 and the 1950's by the Morgan Sign Machine Company of Chicago. A 1931 Canadian patent for an early model of the press indicates that it was designed primarily for use by inexperienced operators: "This invention seeks to provide a machine for the printing of display cards of this general character that does not require a typesetter's services or the use of an expensive press and operator such as has heretofore been the practice." The patent holders of this new press saw it as particularly useful for department stores, "where each day there are new display cards required on the counters for various types of goods which are features of that day's sales." The press could easily be operated by someone not formally trained in printing and typesetting.

During the first half of the 19th century, proofing presses were not common, since a proof could easily be pulled on an iron hand press without a lot of "make-ready." After the introduction of cylinder and rotary presses, proofing presses became essential for any shop because type and engravings needed to be proofed before starting the printing. A proofing press at its most basic involves a cylinder that can be rolled over a sheet of paper placed on an inked forme of type. The Line-O-Scribe is slightly more elaborate, offering inking rollers that allow for longer runs, showing that the press was made for more than simply proofing.

The Line-O-Scribe patent notes that "display cards are usually printed in the ordinary printing press which requires the setting of the type in a form and its mounting in the press etc., and if but a single card is required is an expensive process." The Line-O-Scribe offered department stores the option of producing their signs in-house, simply and quickly.

The Line-O-Scribe in the collection of the Printing Room is designed with the press sitting on top of drawers containing wood and metal type – everything needed to print small signs and cards. One can see why it would have been an ideal press for a store or small printing operation, and it certainly makes an ideal addition to our Printing Room and complements our other presses.

Type

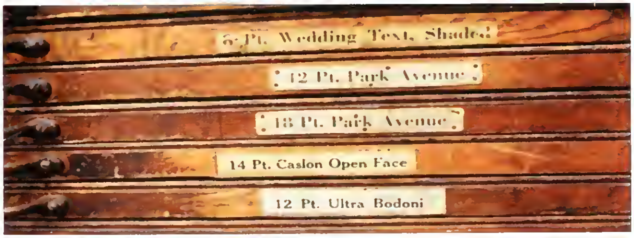
Printing is done using individual metal letterforms. Type was one of the most costly aspects of establishing a printing shop. Typesetting, too, formed a large part of the operating costs of a printing shop, since compositors were skilled workers, performing a labour-intensive task. Typesetting is a specialized task dating back to Gutenberg and his development of moveable type in the 15th century.

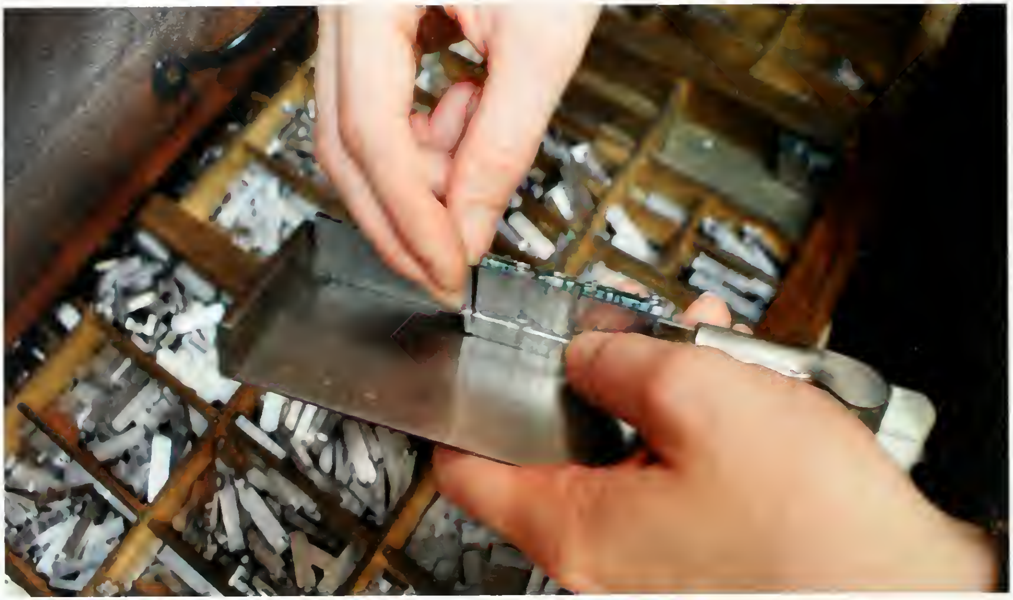
Type was first produced in Canada in the 1830's, by the Montreal Type Foundry, and later the Toronto Type Foundry. Printers in Canada could buy type in Canada, but type was also still imported from England and the United States. The development of industrial typecasting machines in the mid-19th century allowed type foundries to dramatically increase production and reduce the cost of type. Gradually, towards the end of the 19th century, printing shops acquired their own typecasting machines such as the Linotype or the Monotype.

Type Cases

One of the type cases in the Printing Room was sold by Miller & Richard, who had offices in Toronto and Winnipeg. According to an 1892 issue of the trade journal *Printer & Publisher*, Miller & Richard provided Canadian printers with a variety of supplies, including: bookbinders' machinery, printing inks, paper cutters, printers' cabinets and cases, printing presses, type, and type setting machines.

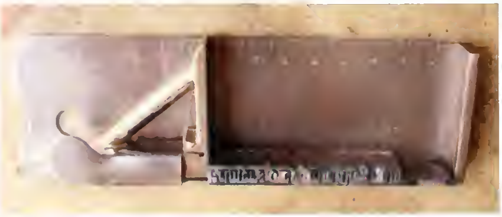
The type is laid out in the case following the "two-third California Job Case" layout. The upper case letters are located in the top two rows, laid out in alphabetical order because they are used less, while the lower case letters occupy the lower portion of the case, and are arranged according to frequency of use.





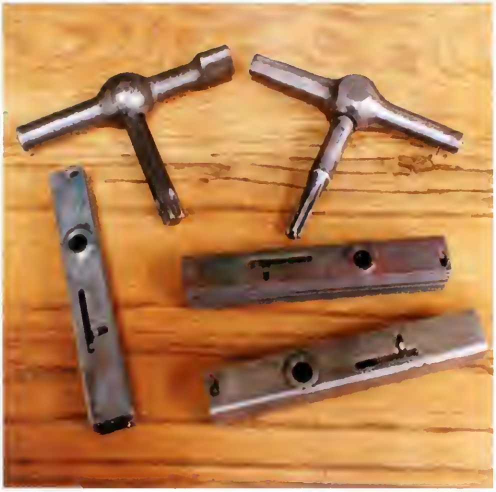
Composing Stick

The composing stick is used to set type by hand. The compositor holds the stick in her left hand and selects type with her right. In the 19th century, a compositor could be expected to set roughly one thousand to twelve hundred characters an hour, approximately one page. Technological change in the late 19th century saw compositors replaced by casting and composing machines such as the Linotype and the Monotype.



Furniture

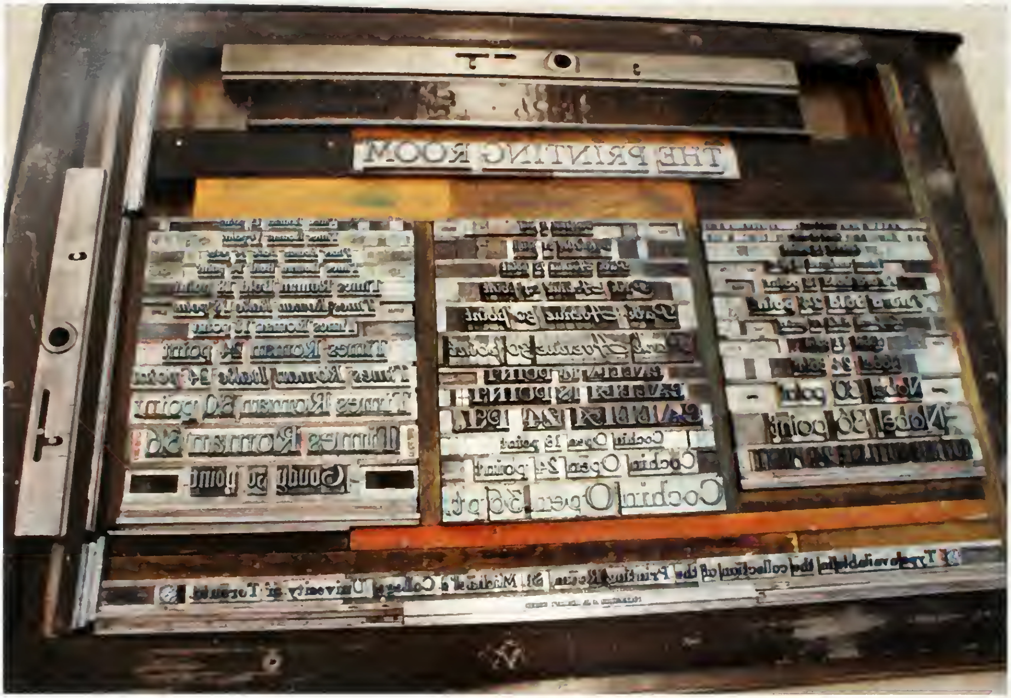
Furniture is lengths of wood (or metal) of different sizes, which are fitted around the type to secure it into the chase. The furniture is made to standard measure lengths and is lower than type height (which is .918 of an inch).



Quoins & Quoin Keys

Quoins and quoin keys are used to lock the type firmly into the chase. Before metal quoins came into use in the 1860's, wooden wedges were used, and were hammered in using a mallet. The quoins are placed between wooden furniture and the chase. The image shows two types of these tools.

Quoin keys are used to lock the quoins, securing everything tightly in place. This is crucial, as any type working its way loose during printing could seriously damage the rollers on the press.



The Jobbing Chase & Forme

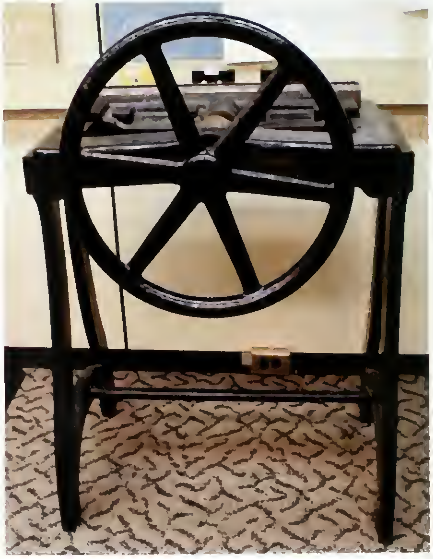
The jobbing chase is a metal frame into which the forme of type is set and locked. In contrast to other chases like the broadside chase and the machine chase, the jobbing chase is used for imposing small work, as opposed to a spread of 2, 4, 6, or 8 pages for a book.

The whole assembly of type, furniture, engravings, ornaments, quoins etc., once bound tightly within the chase, makes up a page image called a forme.

Ink

The ink used in our Printing Room is a rubber-based ink that must be "worked in" before it is used on the press. This is done by using a palate knife. Rubber-based inks are a mid-20th century innovation. In the 19th century, ink was made primarily with "lamp-black" (essentially soot), linseed oil, and rosin. Additional ingredients were turpentine, soap, balsam of Capivi, and other pigments such as indigo, Prussian blue and Indian red.

The Job Backer



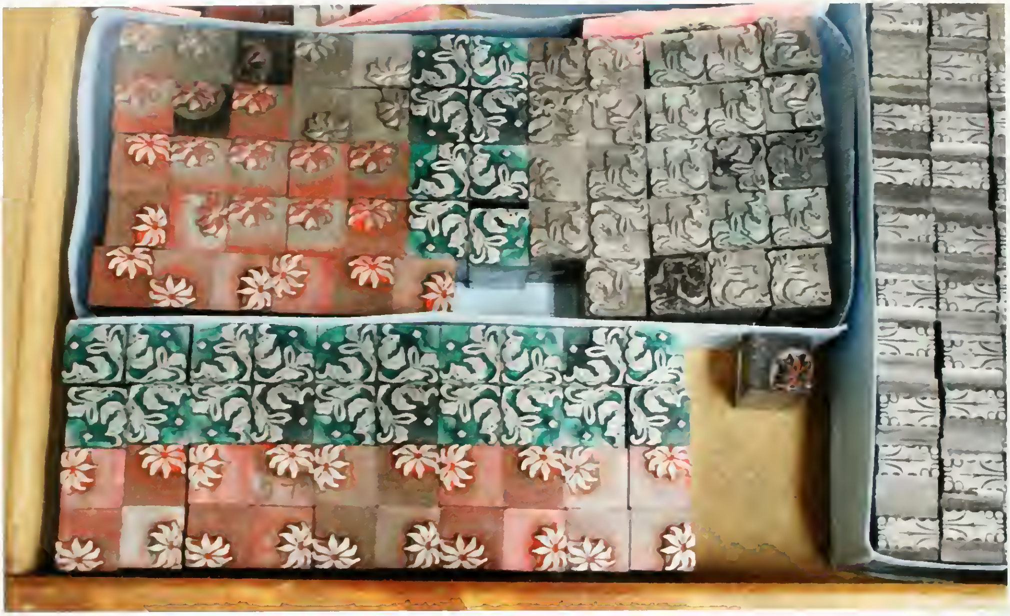
This late 19th century job backer was manufactured by W.O. Hickok & Sons out of Harrisburg, Pennsylvania, and sold within Canada by the Toronto Type Foundry. This tool is used to hold books fast while backing them. It was also used as a finishing press for oversize materials.

In their 1869 catalogue, W. O. Hickok & Sons, a manufacturer of bookbinders' specialties, offer the job backer as: "All of iron, brass, and steel, will take in books 17 inches long and 5 1/2 to 6 inches thick. It is very strong and made in the best manner, $65.00."

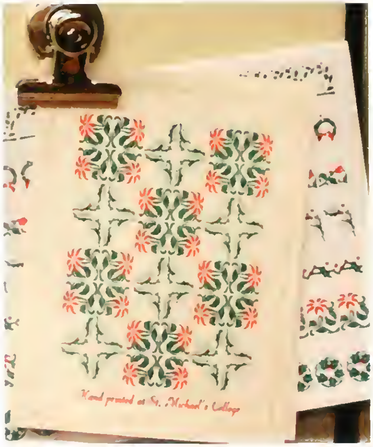
Engravings

The Printing Room has a small collection of engravings that are used as decorative elements on printing jobs. The engravings in our collection include halftones and line blocks. Several of the line blocks were made recently, from digital image files that were turned into relief images. Engravings are made by etching into copper, steel or magnesium either by hand, or by a photo-mechanical process that involves exposing a chemically-treated plate to a film negative and allowing the chemicals to etch away the image. The Printing Room also has several halftone blocks, which were also created by a photo-mechanical process. This process involves photographing an image through a screen, which breaks down the image into dots. Halftones allow tonal images to be printed, which is not possible with line blocks. After an image is created on metal, it is mounted on type-high wood to be the same height as the type.

Many letterpress printers today use photopolymer plates, which allow them to generate their design on the computer and then print image and text together on one plate. At the Printing Room we have adhered to more traditional methods of printing image and text.

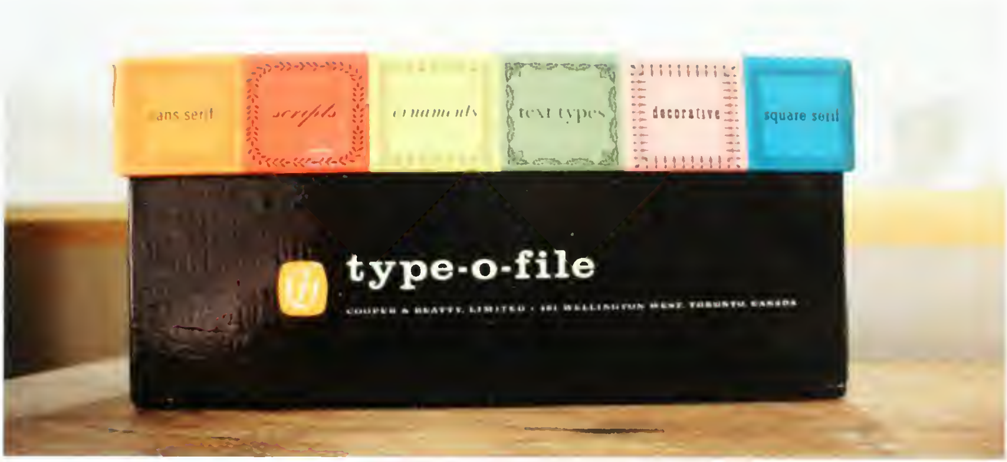


Ornaments



The ornaments in the collection of the Printing Room are originally from the Toronto-based company Cooper & Beatty. Professor Richard Landon, Director of the Thomas Fisher Rare Book Library, and Professor Marie Korey, Head Librarian of the Robertson Davies Library at Massey College, rescued the ornaments from being turned into scrap metal, thus preserving an important element of printing history in Canada.

In our Printing Room, the ornaments are used to create decorative borders and designs on printing projects ranging from Christmas cards and invitations to specimen sheets and posters.



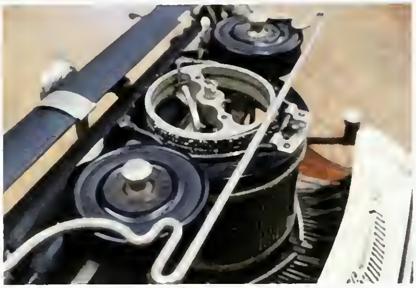
Cooper & Beatty

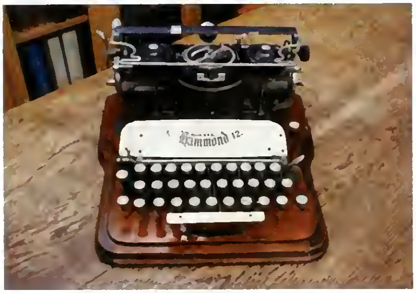
Cooper & Beatty was founded in Toronto in 1921, and was a trade typesetting company, over the years offering both traditional type composing services – composing type on casting machines such as the Monotype – and later offering photo composition services. Cooper & Beatty had the most extensive range of typefaces available in Canada, offering hundreds of hot metal and photo composition typefaces to designers, advertising firms, and printing shops. Cooper & Beatty were also among the first to introduce photo-typesetting in Canada, printing their first photo-typography specimen book in 1954.

Over time, Cooper & Beatty grew to emphasize their expertise in graphic art over trade typesetting, and their interest in typography was evident in the fact that their designers were called typographic craftsmen. Advertising design was done by these designers, who were responsible for the entire production process, from technical production to delivery of the final product. Cooper & Beatty were known for their innovative advertisements for their services as well as for their type specimen books, which show strong evidence of their interest in experimenting with type. Allan Fleming, a well-known graphic designer, (best known for his design of the logo for the Canadian National Railway) designed the Type-o-File box of type specimens in 1956. This box of specimens presents fonts in a range of type "families," such as scripts, ornaments, sans serif and decorative. This set of specimen books was extremely popular, and was reprinted in 1959 and revised in 1964.

The Hammond 12

c. 1905-1915





James Bartlett Hammond (1839-1913) was a court reporter and journalist who covered the American Civil War. In the 1870's he envisaged a printing machine that reporters could take into the field with them. It is likely that Hammond read of such a machine in *Scientific American*, which published an article in 1867 about an invention by John Pratt, called the 'Pterotype.' Hammond was so eager to get into the burgeoning typewriter market that he bought Pratt's patent and his promise to stay out of the typewriter business. This gave Hammond the means to develop a typewriter based on the 'flywheel' design, which was the patented mechanism in Pratt's prototype.

Hammond struggled with his modifications to Pratt's invention until the 1880's and in 1884, his first typewriter reached the market. The first Hammond Typewriter, appropriately named the Hammond 1, was one of the first typewriters to compete with Remington, who at that time dominated the typewriter market. Although it weighed 22 pounds, the Hammond typewriter was more portable than the Remington. The establishment of conclusive dates of production of Hammond typewriters has proven to be quite difficult; we do know, however, that production began on the Hammond 12 (the model of the typewriter in our collection) in 1905, and likely ceased in 1916, when the Hammond Multiplex was created as a replacement for the Hammond 12.

One of the advantages of the Hammond typewriters was that they offered interchangeable font shuttles – the slogan for Hammond Typewriters was "For every nation, for every tongue." This was indeed the case, as the Hammond typewriters advertised "365 different arrangements of type and languages, including Greek, Armenian, Chinese-Phonetic, and all modern European languages."

The Underwood No.5

c. 1906

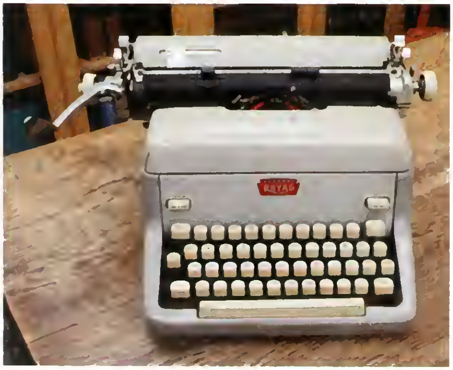
The Underwood No. 5 is the machine people picture when they imagine an old typewriter. This is hardly surprising, since there were millions sold, and the Underwood No. 5 became one of the most popular and oft-imitated typewriters ever produced.

The Underwood typewriter was originally designed by Franz Wagner, a German-American. The patent for the machine was purchased by John T. Underwood, a typewriter ribbon manufacturer. Underwood had been the typewriter ribbon supplier for the Remington Typewriter Company; however, in 1895, Remington decided to begin producing their own ribbons. When Remington refused to renew their contract with Underwood, the Underwood Company began manufacturing their own typewriters the same year. Underwood brought out the immensely popular No. 5 in 1901, and, in the three ensuing decades, over four million No. 5 machines were sold.

The Underwood typewriters gained popularity because they were the first to use a visible front-strike design, allowing the typist to see what was being typed. Franz Wagner was not the first typewriter inventor to use the front-strike design, but he perfected the design which became the industry standard. The front-strike design, combined with the back-space key made this a popular machine that quickly became fierce competition for Remington.

The Royal Standard FP Model

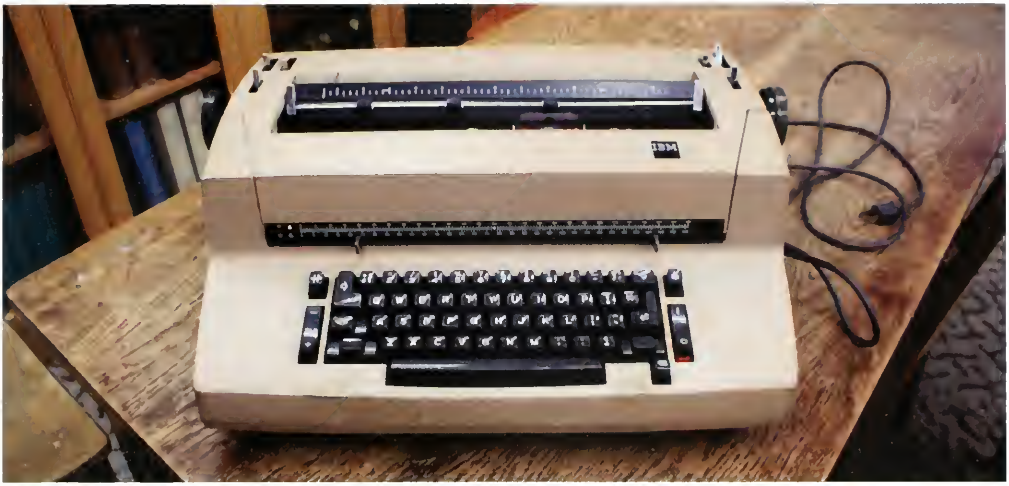
c. 1957-1962



In 1906, the first Royal typewriter was introduced, invented by Edward B. Hess with help from Lewis C. Meyers. Hess was the president of Precision Mechanical Laboratories in New York, but it was Meyers, who had worked for other typewriter companies, who translated Hess's dreams for a new typewriter into reality.

The Underwood typewriters, with their visible front-strike design, had become quite popular, though Remington still held a good share of the market. Hess liked the front-strike design of the Underwood, but he felt that additional modifications could create a simpler machine that required less frequent and expensive repairs than many machines did. Hess also sought to develop a machine that would be easier to operate. He was granted over 140 typewriter patents during the course of his career. The first machine was a failure but his subsequent attempts created a machine with a noticeably faster, lighter touch than other machines on the market.

There was fierce competition in the typewriter business, and in 1926, Royal found a unique way to promote their new portable model. The company staged a wild publicity stunt which had an airplane dropping the typewriters from the sky.



The IBM Selectric

c. 1961-1980

The IBM Selectric embodied the first major change in typewriter design since the 19th century. The Selectric is also referred to as the "IBM Golf Ball typewriter" because of the golf ball-shaped element that was used instead of the many typebars used in traditional typewriters. The Selectric has no typebars and no moveable carriage: the writing element moves instead of the paper. While IBM claimed to be the first to design the "golf ball" typewheel element, there were 19th century precursors to this: a machine patented by Thomas Edison, and the Blickensderfer typewriter, which used the same mechanism, albeit with less success than the Selectric.

The "golf ball" innovation was important because it meant that if the typist hit two keys at once, the typewriter would not jam. In fact the Selectric had "stroke storage": if two keys were hit at once, it would print first one and then the other. An advantage to the Selectric was that, like our Hammond 12 typewriter, with its removable font element, one type ball element could be exchanged for another, allowing the use of multiple fonts and characters.

Industrial designer Eliot Noyes was hired by IBM to design the casing for the machine. Because the machine did not have a moveable carriage, its appearance was completely different from all earlier machines. Noyes' design is considered by many to be a "design classic."

When it was first produced in 1961, the Selectric sold for $765. This high price did not deter consumers however, and over the ensuing decades, with the Selectric I, II and III, it came to dominate the market.

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